

## PRODUCT DATA SHEET

# POLYETHYLENE

## ANTEO™ FK1820

BORSTAR® BIMODAL TERPOLYMER LLDPE FOR HIGH PERFORMANCE FLEXIBLE PACKAGING

### DESCRIPTION

**Anteo™ FK1820** is produced using the proprietary **Borstar®** bimodal terpolymer technology combining outstanding sealing performance with easy processability, good optics and superior mechanical properties. Film made with **Anteo™ FK1820** exhibits unique combination of low seal initiation temperature (SIT), high hot tack force and excellent puncture and tear properties. **Anteo™ FK1820** used in combination with **Borstar® PE / BorShape™ PE / LDPE / PP** products offers best in class high performance transparent flexible packaging solution with potential for down gauging.

**Anteo™ FK1820** contains Antioxidant and processing Aid (PPA).

CAS-No. 60785-11-7

### APPLICATIONS

Heavy duty shipping sacks (HDSS)  
Lamination  
Stand up Pouches  
Agriculture Film  
Multilayer Packaging Film  
Stretch Cling Film

Stretch Hood  
Frozen Food Packaging  
Form Fill Seal (FFS)  
Transparent Film  
Impact modifier

Liner  
Food Packaging  
Artificial Grass  
Lamitube  
Protection Film

### KEY FEATURES

Easy process ability  
Excellent Mechanical Strength  
Excellent Low Temperature Performance  
Superior Puncture Resistance  
Excellent Organoleptic Properties  
Balanced Tear Strength  
Good Optics  
Outstanding Seal Performance (low SIT, High Hot Tack Force and wide sealing Window)

### PHYSICAL PROPERTIES

| Property                      | Typical Value*        | Test Method  |
|-------------------------------|-----------------------|--------------|
| Density                       | 918 kg/m <sup>3</sup> | ASTM D 792   |
| Melt Flow Rate (190°C/2.16kg) | 1.5 g/10min           | ASTM D1238   |
| Melting Temperature           | 122 °C                | ISO 11357/03 |
| Vicat Softening Point         | 102 °C                | ASTM D 1525  |

\* Typical properties and data should not be used for specification work

## FILM PROPERTIES

**Anteo™ FK1820 film properties are measured on 40 micron blown film produced on a lab scale extruder with processing conditions: BUR = 2.5:1, FLH = 3 DD, Die gap =1.8mm**

| Property**                           | Typical Value* | Test Method   |
|--------------------------------------|----------------|---------------|
| Tensile Strength at Break (MD/TD)    | 52/50 MPa      | ISO 527-3     |
| Elongation at Break (MD/TD)          | 650/700 %      | ISO 527-3     |
| Tensile Strength at Yield (TD)       | 11 MPa         | ISO 527-3     |
| Tensile Modulus (MD/TD)              | 210/220 MPa    | ISO 527-3     |
| Tensile Modulus (1 % Secant) (MD/TD) | 190/200 MPa    | ASTM D 882    |
| Elmendorf tear strength (MD/TD)      | 550/700 g      | ASTM D 1922   |
| Dart Drop                            | >1000 g        | ASTM D 1709/A |
| Coefficient of Friction (Dynamic)    | 0.8            | ASTM D 1894   |
| Haze**                               | 8%             | ASTM1003      |
| Gloss (45)**                         | 70             | ASTM D 2457   |
| Puncture Resistance, force           | 55 N           | ASTM D 5748   |
| Puncture Resistance, energy          | 4.5 J          | ASTM D 5748   |

\* Typical properties and data should not be used for specification work

\*\* Blend with 10% LDPE.

## PROCESSING CONDITIONS

**Anteo™ FK1820** can be processed in most types of blown film equipment such as LDPE, LLDPE or HDPE extruders.

**Anteo™ FK1820** is well suited for co-extrusion in combination with Borstar® PE/ BorShape™ PE / LDPE / PP products.

Recommended extrusion temperature is 180 - 210°C. Die gap of 1.4 - 2.2 mm will give the best balance between extruder pressure and physical properties in the film. **Anteo™ FK1820** enables energy saving by processing at lower temperature and motor load with excellent bubble stability.

To boost optical properties of film made with **Anteo™FK1820**, it is recommended to blend with minimum 5% LDPE.

## FOOD CONTACT REGULATIONS

**Anteo™FK1820** fulfils the food contact regulations in most countries. If required, contact your Borouge representative for a certificate.

## STORAGE

This product should be stored in dry conditions at temperature below 50°C and protected from UV-light. Improper storage can initiate degradation, which results in odour generation and colour changes and can have negative effects on physical properties of this product.

More information on storage can be found in Safety Information Sheet (SIS) for this product.

## SAFETY

The product is not classified as a hazardous mixture.

Dust and fines from the product carry a risk of dust explosion. All equipment should be properly earthed. Inhalation

of dust should be avoided as it may cause irritation of the respiratory system. Small amounts of fumes are generated during processing of the product. Proper ventilation is therefore required.

Please see our Safety Information Sheet (SIS) for details on various aspects of safety, recovery and disposal of the product, for more information contact your Borouge representative.

### RECYCLING

The product is suitable for recycling using modern methods of shredding and cleaning. In-house production waste should be kept clean to facilitate direct recycling.

### RELATED DOCUMENTS

The following related documents are available on request, and represent various aspects on the usability, safety, recovery and disposal of the product.

Safety Information Sheet  
Statement on chemicals, regulations and standards  
Statement on compliance to regulations for drinking water pipes

### STANDARDS

Borouge is certified to various ISO standards, please refer to Borouge.com for more information.

### DISCLAIMER

To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication, however, we do not assume any liability whatsoever for the accuracy and completeness of such information.

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Anteo™ is a trademark of the Borealis group.

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